

CLAIMS

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1. A drive apparatus for a hybrid vehicle comprising:
an engine;
a motor constituted by a stator and a rotor;
an automatic transmission having a fluid transmitting
apparatus; and
a case for receiving said motor; and
a driving force output from said engine and said motor being
transmitted to an input member of said fluid transmitting
apparatus,
characterized in that said motor is arranged in a side of an
outer diameter of said fluid transmitting apparatus at a position
at which at least a part of said motor is overlapped with said
fluid transmitting apparatus in an axial direction, with a
predetermined gap between said rotor and said fluid transmitting
apparatus, and
said rotor is supported by one of said fluid transmitting
apparatus and an output shaft of said engine or a combination of
any two among said fluid transmitting apparatus, said case and the
output shaft of said engine.
2. The drive apparatus for a hybrid vehicle according to claim 1,
characterized in that said rotor is supported by the output shaft
of said engine and an input member of said fluid transmitting
apparatus.
3. The drive apparatus for a hybrid vehicle according to claim 1,
characterized in that said rotor is fixed to and supported by the

input member of said fluid transmitting apparatus.

4. The drive apparatus for a hybrid vehicle according to claim 1, characterized in that said rotor is fixed to and supported by the output shaft of said engine.

5. The drive apparatus for a hybrid vehicle according to claim 1, characterized in that said rotor is supported by said case and the input member of said fluid transmitting apparatus.

6. The drive apparatus for a hybrid vehicle according to claim 1, characterized in that said rotor is supported by said case and the output shaft of said engine.

7. The drive apparatus for a hybrid vehicle according to claim 2, characterized in that said rotor has a shaft portion at a center of rotation thereof, and the shaft portion of said rotor is in contact with an output shaft of said engine in an axially narrow area, thereby being supported by said output shaft in such a manner as to freely move relatively.

8. The drive apparatus for a hybrid vehicle according to claim 7, characterized in that a concave portion is formed on an end surface of the output shaft of said engine,

an annular protruding groove portion is formed in an axially narrow area on an outer peripheral surface of the shaft portion of the rotor, and

a shaft portion of said rotor is inserted to said concave portion and said protruding groove portion is in contact with said output shaft, thereby being supported by said output shaft.

9. The drive apparatus for a hybrid vehicle according to any of claims 2, 7 or 8, characterized in that said fluid transmitting

apparatus has a front cover covering a turbine runner and serving as said input member connected to a pump impeller, and

said rotor is supported in a portion opposing said rotor in said front cover and in a side of an outer diameter of said cover.

10. The drive apparatus for a hybrid vehicle according to claim 9, characterized in that said fluid transmitting apparatus has a center piece at a center of rotation thereof, and

said rotor is centered by said center piece.

11. The drive apparatus for a hybrid vehicle according to any of claims 2, 7, 8, 9 or 10, characterized in that a flex plate for transmitting a driving force is provided between the output shaft of said engine and said rotor,

a part of said flex plate is extended out to a side of an outer diameter of the stator in said motor, and

a sensor for detecting a phase of the rotor in said motor is arranged in the side of the outer diameter of said motor so as to detect the extended portion of said flex plate.

12. The drive apparatus for a hybrid vehicle according to claim 2, 7, 8, 9, 10 or 11, characterized in that an end portion of an output shaft of said engine is rotatably supported by a bearing portion and a concave portion is formed on an end surface of said output shaft,

said rotor has a shaft portion in a center of rotation thereof and said shaft portion is inserted to said concave portion so as to be supported to said output shaft, and

a portion to which the shaft portion of said rotor is supported is arranged so that at least a part of the portion is

overlapped with said bearing portion.

13. The drive apparatus for a hybrid vehicle according to claim 3, characterized in that said engine output shaft and the input member of said fluid transmitting apparatus are supported so as to freely move relatively and connected so as to freely move in an axial direction.

14. The drive apparatus for a hybrid vehicle according to claim 4, characterized in that said engine output shaft and the input member of said fluid transmitting apparatus are supported so as to freely move relatively and connected so as to freely move in an axial direction.

15. The drive apparatus for a hybrid vehicle according to claim 5, characterized in that said rotor and the input member of said fluid transmitting apparatus are integrally fixed so as to be rotatably supported to said case and connected to the output shaft of said engine so as to freely move in an axial direction.

16. The drive apparatus for a hybrid vehicle according to claim 6, characterized in that said rotor and the output shaft of said engine are integrally fixed so as to be rotatably supported to said case and connected to the input member of said fluid transmitting apparatus so as to freely move in an axial direction.

17. The drive apparatus for a hybrid vehicle according to any of claims 1 to 16, characterized in that said fluid transmitting apparatus has a front cover covering a turbine runner and serving as said input member connected to a pump impeller, and

said front cover has a flat portion extending in an axial direction and said rotor is arranged in a side of an outer side of

